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AUTHOR Baumann, James F.
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ABSTRACT

Since many studies indicate that young readers have difficulty comprehending many commonly occurring forms of anaphora, an instructional experiment was conducted in which a variety of anaphoric forms was taught, the intervention period was of sufficient duration, and external validity was enhanced so that results would be generalizable to the realm of children and teachers in classrooms. Sixty rural midwestern third-grade students received nine, 40-minute lessons over three consecutive weeks, after which four posttests were given. Students were divided into three groups: (1) the strategy group, in which the strategy was based on successful instructional research found to be effective in teaching sixth-grade students to comprehend main ideas; (2) the basal group, in which the anaphora instruction came from a current popular reader series; and (3) the control group, which did not receive any additional instruction. The results of the study suggest that the implementation of a direct instruction model for teaching children to comprehend anaphoric relationships is superior to basal reader instruction in anaphora and to no instruction at all. Specifically, the findings show that the strategy group outperformed both basal and control groups in ability to find the antecedent for specified anaphoric terms; the basal group did not outperform the control group in anaphora comprehension; the strategy group outperformed both basal and control groups in ability to answer anaphora-specific questions; the overall pattern of results for treatment held true whether students read narrative or expository texts; and there were no treatment-by-achievement level interactions. (EL)

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Teaching Third Grade Students to Comprehend Anaphoric Relationships

James F. Baumann

Purdue University

Paper presented at the 34th Annual Meeting
of the National Reading Conference
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Teaching Third Grade Students to Comprehend Anaphoric Relationships

James F. Baumann, Purdue University

A number of studies indicate that young and developing readers have considerable difficulty comprehending many commonly-occurring forms of anaphora (Barnitz, 1980; Bormuth, Carr, Manning, & Pearson, 1970; Chapman, 1979; Detore, 1978; Gottsdanker-Willekens, 1981; Kameenui & Carnine, 1982; Moberly, 1978; Richek, 1976-77; Stevenson, 1980; Strachan, 1983; Teddlie, 1979). Given all the interest in determining if and when young readers develop proficiency at comprehending anaphoric relationships (see Irwin, in press), it is somewhat surprising that there has been little instructional research on anaphora comprehension. Several authors have discussed the need for instruction in anaphora (e.g., Chapman, 1983; Durkin 1981) or recommended specific instructional strategies (e.g., Baumann & Stevenson, in press-a; Gottsdanker-Willekens, in press, Hittleman, 1983; McNeil, 1984; Pearson & Johnson, 1978), but a review uncovered only one instructional study (Dommes, 1980), the results of which were equivocal. It was the purpose of the study to conduct an instructional experiment that extended the work of Dommes (1980) such that a (a) variety of anaphoric forms were taught, (b) the intervention period was of sufficient duration, and (c) external validity was enhanced so that results would be generalizable to the realm of children and teachers in classrooms.

Method

Subjects and Design

Third-grade students from an elementary school in a rural midwestern community participated in the study. Sixty-seven of the 72 third graders obtained parental permission to participate in the study. A 3 X 3 posttest-only control group design was employed in which the two factors were treatment (Strategy, Basal, Control) and anaphora ability level (High, Middle, Low). Anaphora ability level was determined by administering an experimenter-constructed pretest to all 67 students. The students who obtained the seven lowest scores on the pretest were not included in the study since these students had either severe decoding or comprehension problems or both. Blocking on pretest scores, the remaining 60 students were randomly assigned to treatments in the following manner: The 21 students achieving the highest scores on the pretest were randomly assigned, 7 each, to treatments. Likewise, students achieving the middle 18 scores were randomly assigned, 6 each, to treatments; and students with the lowest 21 scores were randomly assigned, 7 each, to treatments. Thus, each group consisted of 7 High-, 6 Middle-, and 7 Low-achieving students.

Procedure

Students in the Strategy and Basal groups received nine lessons of 40 minutes each, with all instruction being administered by the experimenter. The lessons were distributed such that each group received one lesson on Monday, Wednesday, and Friday for each of three consecutive weeks. Three different posttests were administered to students in all experimental groups during the fourth week, one each on Monday, Wednesday, and Friday. A delayed posttest was administered three weeks later.

Experimental Groups

Strategy Group. The content of the Strategy group lessons was taken from a taxonomy of anaphoric relationships by Baumann and Stevenson (in press-b), which includes anaphora forms under the categories of Noun Substitutes, Verb Substitutes, and Clausal Substitutes. The instructional strategy (Baumann, 1983) was founded on teacher effectiveness research (e.g., Rosenshine & Stevens, 1984) and successful comprehension instructional research (see a review by Pearson & Gallagher, 1983) and was found to be effective in teaching sixth grade students to comprehend main ideas in a prior instructional study (Baumann, in press). An important aspect of the instructional strategy is that responsibility for teaching and learning gradually shifts (Pearson & Gallagher, 1983) from full teacher responsibility to shared pupil/teacher responsibility to full pupil responsibility. The instructional strategy consisted of five steps, which were repeated for each of the nine lessons. The five steps were (a) Introduction, (b) Example, (c) Direct Instruction, (d) Teacher-Directed Application, and (e) Independent Practice. Each of the nine strategy lessons was modeled after anaphora instruction recommended by Baumann and Stevenson (in press-a).

Basal group. To compare the performance of students in the Strategy group to children who received more traditional instruction in anaphora, students in the Basal group received anaphora instruction as outlined in the teacher's edition of a current popular basal reader series (Clymer & Venezky, 1982). Nine separate lessons from the teacher's edition of two consecutive levels of the basal program (Levels 10 and 11) were taught as explicitly stated in the manual.

Control Group. Students in the control group did not receive any additional instruction in anaphora comprehension. They simply took part in the regularly-scheduled language arts instruction, which was administered by one of the third grade teachers, while students in the Strategy and Basal groups met with the experimenter for instruction on anaphora.

Dependent Measures

Four instruments were used to assess students' ability to comprehend anaphoric relationships, the first three of which were administered the week immediately following the end of instruction, and the fourth being administered four weeks after the conclusion of instruction. Posttest 1 involved a find-the-antecedent task in which students were required to read short, contrived texts and then write the antecedent for an underlined anaphoric term. Posttest 2 provided a more naturalistic measure of anaphora comprehension, in which students read one narrative and one expository excerpt from basal readers. This posttest also involved a find-the-antecedent task. Posttest 3 was designed to be a more global measure of anaphora comprehension. It required students to read excerpts from third-grade-level basal reader selections (narrative and expository) and answer anaphoric-specific wh questions. To determine the perseverance of any treatment effects, a delayed posttest, Posttest 4, was constructed. It was identical to Posttest 2 in that it consisted of one narrative basal reader excerpt and one expository excerpt and required students to complete 40 find-the-antecedent items.

Data Analyses

Because four separate dependent measures were used to assess anaphora comprehension, multivariate analysis of variance (MANOVA) was used to test for treatment effect, achievement effect, and any possible interaction.

Results

Treatment and Achievement Level Effects

Table 1 presents mean total correct scores and standard deviations for students' performance, by achievement level, on each of the four posttests. Figure 1 presents these results graphically. MANOVA results revealed a significant main effect for treatment [F (8, 94) = 6.626, $p < .001$] and for achievement level [F (8, 94) = 7.278, $p < .001$]. The treatment by achievement level interaction did not attain statistical significance [F (16, 144) = 1.505, $p < .106$]. Table 2 presents univariate F test results and post hoc results for the treatment factor for each posttest. As can be seen, each individual univariate test attained statistical significance, indicating that each dependent variable contributed to the significant omnibus MANOVA for treatment. Post hoc tests indicated that the Strategy group outperformed both the Basal and Control group for each posttest; in addition, the Basal group's performance exceeded that of the Control group for Posttest 1.

Genre Effects

In order to determine if the type of test affected students' performance in anaphora comprehension, separate 3 X 3 analyses of variance (ANOVAs) were conducted for responses to narrative and expository test items. Table 3 presents mean scores for the total number of narrative items (57) and the total number of expository items (47), summed across Posttests 2, 3, and 4 (Posttest 1 consisted of short, experimenter-written texts that could not be classified easily as either narrative or expository). For the narrative items, results indicated a significant main effect for treatment [F (2, 50) = 11.686, $p < .001$] and for achievement level [F (2, 50) = 17.239, $p < .001$]. The interaction did not attain statistical significance [F (2, 50) = .387, $p < .817$]. Post hoc analyses for the treatment factor indicated that the Strategy group outperformed both the Basal group ($p < .01$) and the Control group ($p < .01$). The ANOVA for the expository items indicated a significant main effect for treatment [F (2, 50) = 12.994, $p < .001$] and for achievement level [F (2, 50) = 23.629, $p < .001$] but not for the interaction [F (2, 50) = .833, $p < .504$]. Post hoc analyses for the treatment factor indicated that the Strategy group outperformed both the Basal group ($p < .01$) and the Control group ($p < .01$) and that the Basal group outperformed the Control group ($p < .01$).

Converting the total scores from Table 3 to simple percentage of items correct reveals little difference in performance by students between narrative and expository items. The percentage of items correct for narrative texts were 81.1%, 72.0%, and 66.8% for the Strategy, Basal, and Control groups, respectively (73.3% across all groups); comparable percentages for the expository texts were 80.2%, 68.5%, and 64.6% (71.1% across all groups). These values indicate that students performed at approximately the same level on anaphora comprehension posttests for both narrative and expository texts.

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Discussion

The results of the study suggest strongly that the implementation of a direct instruction model for teaching children to comprehend anaphoric relationships is superior to basal reader instruction in anaphora and to no instruction at all. In addition, these findings were true for both narrative and expository texts. Results can be summarized in the following manner.

1. The Strategy group outperformed both the Basal and Control groups in ability to find the antecedent for specified anaphoric terms. This was true for short, contrived texts (Posttest 1) and for ecologically valid narrative and expository texts (Posttest 2). These findings were also manifest in a delayed posttest (Posttest 4), indicating that the treatment effects persisted across a short period of time (one month).

2. The Basal group generally did not outperform the Control group in anaphora comprehension. The only exceptions were for short, contrived texts (Posttest 1) and for the expository-only test items.

3. The Strategy group outperformed both the Basal and Control groups in ability to answer anaphora-specific questions (Posttest 3); this finding was also evident in the delayed posttest.

4. The overall pattern of results for treatment (i.e., Strategy > Basal, Strategy > Control) held true whether students read narrative or expository texts.

5. There were no treatment by achievement level interactions, indicating that treatment effects were consistent across all three ability groups.

In conclusion, the present study provides further evidence that the implementation of a direct instruction model (e.g., Baumann, 1983, in press) or another teacher-directed, active-teaching paradigm (e.g., Fitzgerald & Spiegel, 1983; Hansen, 1981; Hansen & Pearson, 1983; Patching, Kameenui, Carnine, Gersten, & Colvin, 1983; Raphael & McKinney, 1983; Raphael & Pearson, 1982; Reis & Spekman, 1983; Taylor & Beach, 1984; Tharp, 1982) is effective in teaching students to comprehend written text. This study may indeed be another example of proving the obvious, namely, that students learn what they are taught. Unfortunately, little direct instruction of reading comprehension occurs in elementary classrooms (Durkin, 1978-79). The challenge remains for publishers to equip teachers with materials that provide them sufficient guidance in the direct teaching of reading comprehension and for teacher educators to train pre- and inservice teachers how to adequately teach children to comprehend what they read.

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